

Applicant: Vilkomerson, D.  
U.S.S.N.: 10/780,241  
Filing Date: February 17, 2004  
Docket No.: DVX-02

### **REMARKS**

The Final Office Action mailed August 22, 2007 has been carefully considered.

Entry of the amendments to the claims and reconsideration is respectfully requested in view of the amendments made to the claims and for the remarks made herein.

Claims 1-11 and 22-34 are pending and stand rejected.

Claims 1, 6, 8, 22-24, 28-29 and 31-32 have been cancelled.

Claims 2, 3, 5, 9, and 25 have been amended

### **Information Disclosure Statement**

The Examiner has stated that the patents, publications and other information disclosed in the written description were not submitted in accordance with MPEP 609.04(a) and, hence, have been considered.

Applicant would note that the patents, publications and other information disclosed in the written description were provided as background information to support the teachings of the invention.

However, applicant submits herewith a list of the patents, publications and other information disclosed in the written description on a PTO-892 form and respectfully requests that this material be considered in evaluating the patentability of the instant application.

Applicant makes no representations or statements regarding the materiality of the subject matter disclosed in the patents, publications and other information disclosed in the written description with regard to the novel feature of the instant invention.

### **Objection to the Drawings**

The Examiner has objected to the Drawings as being informal in that the drawings contain handwritten portions. In a telephone call with the Examiner, the Examiner clarified to applicant's representative that formal drawings need not be provided at this time and that it would be sufficient to provide drawings with the handwritten portions replaced by type portions.

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In view of the Examiner's clarification of the objection, applicant submits herewith amended drawings, properly annotated as Replacement Sheets, to replace the objected to drawings.

No new matter has been added. The drawings have been amended to replace the handwritten labels with typed labels.

Entry of the Replacement Sheets is respectfully requested and the objection withdrawn.

### **Rejection under 35 USC 101**

The Examiner has rejected claims 1-11 under 35 USC 101 for allegedly being directed to non-statutory subject matter. The Examiner states that the claims are directed to a method for measuring fluid velocity but do not result in any kind of physical transformation, nor does the method provide a useful, tangible and concrete result.

Applicant respectfully disagrees with and explicitly traverses the reason for rejecting the claims. However, the claims have been amended to further recite that a fluid velocity is determined based on the adjusted Doppler frequencies. Applicant submits that the determination of a fluid velocity is a useful, tangible and concrete result and, hence, patentable subject matter.

Applicant respectfully requests that the amendments be entered in the record and that the application be reconsidered in view of the amendments to the claims and the remarks made herein.

### **Rejection under 35 USC 112, first and second paragraph**

The Examiner has rejected claims 22-34 under 35 USC 112 first paragraph for failing to comply with the enablement requirement. The Examiner alleges that the description in the specification fails to recite any structure which would constitute the means recited in claims.

The Examiner has further rejected claims 1-11, 22-24, 28, 29 and 32 under 35 USC 112, second paragraph as being indefinite for failing to particularly point out the subject matter the applicant regards as the invention. The Examiner states that the preamble refers to measuring fluid velocity using Doppler flow but fails to recite any steps for measuring fluid velocity.

Although, applicant respectfully disagrees with and explicitly traverses the Examiner's reason for rejecting the claims, the independent claims have been amended to further recite that

the invention disclosed is a method and apparatus for improving a measurement of fluid velocity from adjusted Doppler frequency measurements. No new matter has been added. Support for the amendment may be found at least in paragraph [0029] which states "[i]n general terms, the method of the invention uses the constancy of the velocity vector spatial orientation to correct for errors due to the random nature of the Doppler signal, rather than temporally filtering the vector orientation as in existing systems"

In addition, with regard to the failure to provide any structural means for executing the steps recited herein, applicant submits that the specification recites in paragraph [0022] that "[t]he method of the invention may be utilized in any suitably arranged Doppler ultrasound system which employs an ultrasound transducer configuration that uses two or more beams. The method may be implemented in such system as software, hardware or as a combination of software and hardware. For example, the method may be implemented as computer-executable instructions and data stored on a hard disk drive of a personal computer..."

Hence, the specification clearly provides a structural representation of a system in which the recited steps may be performed within the ultrasound system by computer instructions. Computer instruction and processing are well known in the art and would be understood by those skilled in the art without having to provide detailed recitation of such elements.

Applicant respectfully requests that the amendments be entered in the record and that the application be reconsidered in view of the amendments to the claims and the remarks made herein.

### **Rejection under 35 USC 102**

The Examiner has rejected claims 1-11 and 22-34 under 35 USC 102(e) as being anticipated by Crition (USP no. 6,464,637).

Applicant respectfully disagrees and explicitly traverses the reason for rejecting the claims.

Crition disclose an ultrasound system the produces an image including a block vessel, wherein the direction of the blood flow is used to correct the Doppler estimate for angle of insonation. The orientation of the blood flow direction indicator is set automatically by a vector processor. The automatically calculated angle is used to display the correct flow velocity

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without user intervention. Crition discloses the determination of a true Doppler velocity vector based on the Doppler frequency shift and the orientation of the transmitted ultrasound wave ( $K_0$ ) and the orientation of the receiving directions ( $K_1$  and  $K_2$ ).

However, Crition fails to disclose adjusting the Doppler frequencies based on a true velocity determined as an average of a sum of velocity vectors determined from peak frequencies, as is recited in the claims. Crition fails to provide any teaching regarding averaging velocity values or adjusting frequencies based on the average velocity.

A claim is anticipated only if each and every element recited therein is expressly or inherently described in a single prior art reference.

Crition cannot be said to anticipate the subject matter recited in the claims as Crition fails to expressly or inherently describe each and every element recited in the independent claims.

With regard to the remaining dependent claims, these claims ultimately depend from the independent claims and, thus, the remaining dependent claims are also allowable by virtue of their dependence from an allowable base claim, without arguing the merits of each claim individually.

For the amendments made to the claims and for the remarks made herein, applicant respectfully requests that amendments to the claims be entered and the rejection be withdrawn.

A Power of Attorney is submitted herewith, to allow the undersigned attorney to represent the applicant in further prosecution of this matter before the Office. Entry of the new Power of Attorney is respectfully requested.


DVX, LLC, 2 Carterbrook Road, Princeton, NJ is the owner of record of the instant application by virtue of the Assignment of all rights and title of the subject matter claimed to DVX Corporation by the inventors as evidenced by the assignment recorded at reel/frame 020536/0377.

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In the event the Examiner deems personal contact desirable in the disposition of this case,  
the Examiner is invited to call the undersigned attorney at the telephone given below.

Respectfully submitted,

Dated: \_\_\_\_\_  
February 21, 2008

  
\_\_\_\_\_  
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